

PROJECT DESCRIPTION  
THIS PROJECT INVOLVES RECONSTRUCTION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 528 & 77TH STREET INCLUDING APS PUSHBUTTONS, LED COUNTDOWN PEDESTRAIN SIGNAL HEADS, LED TRAFFIC SIGNAL HEADS AND VIDEO DETECTION. MD 528 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE MD 528 LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING.

CONTROLLER REQUIREMENTS

A FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH TELEMETRY CABLE HOUSED IN A BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE FURNISHED BY SHA. AN APS CENTRAL CONTROL UNIT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS COASTAL HIGHWAY:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS COASTAL AT 77TH. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACT PERSONS FOR DISTRICT #1 ARE AS FOLLOWS:

MR. KENNETH CIMINO  
ASSISTANT DISTRICT ENGINEER-TRAFFIC  
PHONE: (410) 677-4040

MR. BRUCE POOLE  
DISTRICT UTILITY ENGINEER  
PHONE: (410) 677-4082

MR. TERRY MCGEAN  
TOWN OF OCEAN CITY - CITY ENGINEER  
PHONE: (410) 289-8845

MR. GREG HOLSEY  
ASSISTANT DISTRICT ENGINEER - CONST.  
PHONE: (410) 677-4020

MR. JAMES WRIGHT  
ASSISTANT DISTRICT ENGINEER - MAINT.  
PHONE: (410) 677-4010

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MR. RICHARD L. DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS  
DIVISION  
PHONE: (410)787-7630

MR. ED RODENHIZER  
CHIEF, SIGNAL OPERATIONS  
PHONE: (410)787-7650

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF  
TRAFFIC OPERATIONS  
PHONE: (410)787-7630

MR. EUGENE BAILEY  
CHIEF, SIGN OPERATIONS  
PHONE: (410)787-7676

MR. JOHN GOVER  
OFFICE OF HIGHWAY DESIGN  
PHONE: (410) 545-8766

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
8044	CONTROLLER CABINET, SIZE 6 WITH VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS	EA	1
9571	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 4 - D-3(1) (72"x16") 4 - R10-3(1) (9"x15")	SF	36

WIRING KEY

Q,R,S,T	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Y,AA	EXISTING 12-PAIR COMMUNICATION CABLE (NO. 19 AWG) SELF-SUPPORTING OVERHEAD TO BE DISCONNECTED, PULLED BACK & REROUTED
C,F,I,L M,N,O,P	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	PF	RELOCATED UNDERGROUND POWER SERVICE BY DELMARVA
A,B,D,E, G,H,J,K	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
BB	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG) 3 RUNS	+	PROPOSED GROUND ROD
U,V,W,X	VIDEO DETECTION CAMERA CABLE (3-CONDUCTOR, NO. 18 AWG)		

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

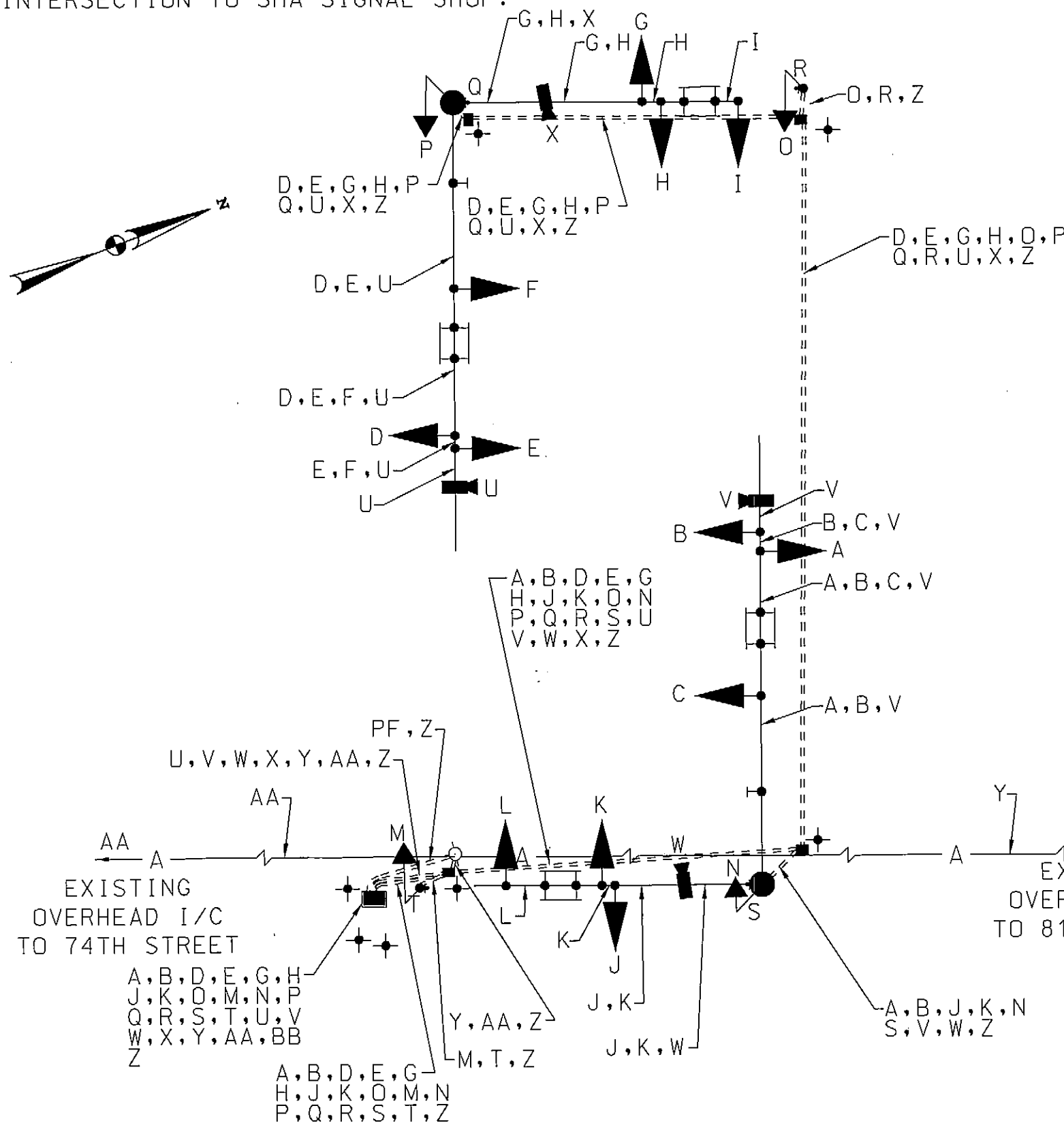
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1001	MAINTENANCE OF TRAFFIC (PAID UNDER MD 528 @ 30TH ST)	EA	0
5002	5 INCH HEAT APPLIED YELLOW PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING	LF	160
5003	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS	LF	1200
5005	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	1100
5006	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	40
6002	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH	LF	176
6004	5 INCH CONCRETE SIDEWALK	SF	860
8001	12 INCH LED SIGNAL HEAD SECTION	EA	6
8002	2 WIRE CENTRAL CONTROL UNIT	EA	1
8005	ADJUST EXISTING HANDHOLE TO GRADE INCLUDING COLLAR	EA	1
8007	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS	EA	4
8028	BREAKAWAY PEDESTAL POLE (ANY SIZE)	EA	2
8029	REMOVE & DISPOSE MATERIAL & EQUIPMENT PER ASSIGNMENT	EA	1
8032	TWIN MAST ARM POLE & 50 FT/70 FT MAST ARMS ANY 'T' DIMENSION	EA	2
8034	VIDEO DETECTION CAMERA & CABLE	EA	4
8035	12 PAIR COMMUNICATION CABLE, SELF- SUPPORTING AND/OR JELLYFILLED	LF	3000*
8036	3 INCH ELECTRICAL CONDUIT-PVC RISER	LF	30
8039	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	110
8041	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED	LF	250
8043	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED	LF	110
8045	DETECTABLE WARNING SURFACES	SF	80
8046	INSTALL GROUND MOUNT AND/OR OVERHEAD SIGN	SF	36
8048	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	360
8050	WEATHER HEAD, 3 INCH	EA	1
8052	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS	EA	1
8053	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN	LF	100
8054	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	4
8060	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	2
8062	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	660
8064	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	790
8065	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	2200
8073	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	1
NEG	RELOCATE EXISTING SIGN	EA	2
NEG	6"x6" LANDSCAPE TIMBER	LF	27
NEG	RELOCATE EXISTING TRAFFIC SIGNAL (ENTIRE CLUSTER)	EA	10
NEG	RELOCATE EXISTING PED SIGNAL	EA	4

\*INTERCONNECT CABLE QUANTITY SHALL ONLY BE USED AS NECESSARY WHEN IT IS NOT POSSIBLE TO REROUTE EXISTING CABLE

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME PROPERTY OF THE CONTRACTOR. CONTRACTOR SHALL RETURN ALL VIDEO DETECTION CAMERAS REMOVED FROM THE INTERSECTION TO SHA SIGNAL SHOP.



TOD No: XX224-08  
SHA No: WO.409A51/CS1  
MD 528 @ 30th St.; MD 528 @ 77th St.

**RKK**  
Rummel, Klepper & Kahl, LLP

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PH: (410) 728-2200 FAX: (410) 728-3100

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PHASING CHART

NO PHASE CHANGE

GENERAL NOTES

- ALL EXISTING FOUNDATION TOPS WITHIN EXISTING SIDEWALK SHALL BE REMOVED 2" BELOW SIDEWALK GRADE AND NEW SIDEWALK SHALL BE INSTALLED TO BE FLUSH WITH FINAL GRADE.
- ALL PROPOSED FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
- ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- ANY HARDWARE NECESSARY FOR THE INSTALLATION OF RELOCATED TRAFFIC SIGNAL EQUIPMENT SHALL BE INCIDENTAL TO THE PERTINANT RELOCATE PAY ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
- THE CONTRACTOR SHALL COORDINATE WITH DISTRICT 1 TRAFFIC TO COORDINATE TRAFFIC SIGNAL TURN OFF AND TEMPORARY STOP CONTROL. CONTRACTOR SHALL VERIFY ANY EVENT OR DATE RESTRICTIONS PRIOR TO TRAFFIC SIGNAL TURN OFF.
- UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS PRIOR TO INSTALLATION.
- VIDEO DETECTION CAMERA LOCATION/ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL CAP AND ABANDON CONDUIT FEEDING SIGNAL EQUIPMENT THAT IS REMOVED.
- ADA REQUIRES THAT ANY ABRUPT CHANGE IN ELEVATION IN SIDEWALK BE LESS THAN 1/4".
- VIDEO DETECTION CAMERAS FOR EAST AND WEST APPROACHES SHALL BE CHECKED IN THE FIELD BY THE ENGINEER PRIOR TO PERMANENT INSTALLATION TO ELIMINATE ANY POSSIBLE TELECOMMUNICATION CABLE CONFLICTS.
- THE CONTRACTOR SHALL ENSURE ALL UNDERGROUND UTILITIES ARE MARKED PRIOR TO TRAFFIC SIGNAL STAKEOUT. THE CONTRACTOR SHALL ENSURE ALL UNDERGROUND UTILITIES ARE MARKED AND STAKEOUT HAS OCCURED PRIOR TO TRAFFIC SIGNAL TURN OFF.

**SHA**

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION

MD 528 (COASTAL HWY.) AT 77TH ST.  
OCEAN CITY, MARYLAND

REVISIONS

GENERAL INFORMATION SHEET

SCALE NONE DATE SEPTEMBER 2010 CONTRACT NO. XX2245185

DESIGNED BY BJC COUNTY WORCESTER  
DRAWN BY BJC LOGMILE 23052803.84  
CHECKED BY BLB TMS NO. K547  
FAP NO. TOD NO.

TS NO. 2256C-GI DRAWING SC-4 OF 4 SHEET NO. 5 OF 7

PLOTTED: Thursday, September 16, 2010  
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